

Appl. No. : 09/554,288
Filed : January 09, 2001

REMARKS

In the Office Action, the Examiner rejected Claims 10 and 19-22 under 35 U.S.C. § 103(a) as being unpatentable over Seidl et al (US 4,244,705) in view of Williams, Jr. et al (US 4,922,932). The Applicant has carefully reviewed the Seidl '705 and Williams '932 references and notes that both references teach versions of arrangements of one or more rotary feeders for transport of particulate matter while controlling ingress/egress of gas constituents within the devices. More particularly, Seidle '705 teaches an arrangement of three rotary gas locks 36, 37, 38 similarly 61, 62, 63, which are interconnected via interposed ducts 41, 42 and 67, 68 respectively. Gas pressure is maintained at various pressure levels between the inlets and outlets of the serially arranged gas locks to control ingress and egress of gas through the Seidl '705 device, such as to provide safety protection against emission of reactive, flammable, or toxic gas. The Applicant concurs with the Examiner's construction that the ducts 41, 42, 67, 68, as well as the inclined rotary kiln 11 could be considered intermediate containers.

However, the Applicant respectfully notes that Seidl '705 in no way teaches or suggests a return feed from any of the rotary gas locks to the source container as in the Applicant's claimed invention nor to any other portion of the Seidl device. Seidl '705 teaches only a strictly one-way movement path through the Seidl device and the Applicant finds no teaching or suggestion of the desirability of such a feature anywhere in the Seidl reference. In contrast, the sealing or gas regulation provision of Seidl '705 indicated as particularly important in a transfer process of solid materials in an environment of high-temperature, flammable, or toxic gases is provided by the maintenance of the different pressures (*cf.* Column 2, Lines 51-61) of atmospheric air pressure, exhaust pressure P_E , buffer seal gas pressure P_B , and process pressure P_P and limited leakage of gas passed past one or more of the rotary gas locks. The gas regulation provided by Seidl '705 are thus not controlled by the solid materials themselves and Seidl '075 is mute as to the importance of maintaining any particular height or amount of particulate matter within the ducts 41, 42, 67, 68. The Applicant thus does not agree that a skilled artisan considering or employing the teachings of Seidl '705 would be motivated to include the teachings of Williams '932, however the Applicant further believes that even if these teaching were taken in combination, they still fail to teach the Applicant's claimed invention.

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In particular, Williams '932 teaches a tobacco feeder assembly which conveys a feed of tobacco particles 28 from an infeed conveyor 12 into a feed tube 14 and then via a rotary conveyor 16 through a receiving hopper 18 and through a star valve 20 into an impregnation chamber 22 wherein the tobacco 28 is exposed for treatment such as with Freon gas, vapor, or other volatile liquids which Williams '932 teaches would generally be provided at a pressure above atmospheric generally in the range of 20 psig. Williams '932 also indicates that the feeder assembly 10 is also applicable to feed a particulate matter other than tobacco. Similarly to the application of the Seidl '705 device, the feeder assembly of Williams '932 is configured to maintain a substantial gas seal feature to the tobacco feeder, in this application to inhibit escape of a treatment or impregnating agent such as Freon gas or vapor. Williams '932 regulates the feed of tobacco 28 into the feed tube 14 as well as the rotational speed of the rotary conveyor 16 so as to maintain a desired amount and height of tobacco 28 within the feed tube 14 so as to provide a tobacco plug 42 providing a vapor barrier preventing egress of the treating or impregnating medium from the interior of the hopper 18 and thus the inlet end of the tobacco feeder 10.

The Applicant notes that the teachings of Williams '932 are of a different arrangement than the Applicant's claimed invention and provide a different function. In particular, the Applicant notes that the rotary conveyor 16 of the Williams '932 device does arguably provide some degree of return feed to the feed tube 14 however this is done so as to maintain the quantity of tobacco 28 forming the tobacco plug 42 at a desired level in the feed tube 14 which **precedes** the rotary conveyor 16 not the **intermediately** disposed receiving hopper 18 as in the Applicant's claimed invention. More particularly, the intermediate container (receiving hopper 18 of Williams) provides no control function at all, the tobacco 28 simply falling from the rotary conveyor 16 to the star valve 20 through the receiving hopper 18 which also provides an enclosure to contain the treating or impregnating media. The interior of the intermediate container or receiving hopper 18 communicates with a pipe 99 however this pipe is described as maintaining the interior of the tobacco hopper 18 below atmospheric pressure by suitable gas evacuation and has nothing to do with the regulation of the tobacco plug 42. Further, the intermediate container or receiving hopper 18 of Williams '932 is substantially empty with only a stream of tobacco 28 falling therethrough as opposed to the Applicant's claimed invention

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wherein “return feed from the rotary-vane feeder from an intermediate container disposed between the rotary-vane feeder and the metering device to the source container takes place wherein said controlling takes into account a filling state of the intermediate container so as to maintain the intermediate container substantially filled” (Claim 10 as currently amended). Thus, Williams '932 regulates the feed rate of the rotary conveyor 16 based upon the amount of material in a source container (the feed tube 14) and **not** based upon the material in an intermediate container or receiving hopper 18.

The Applicant further notes that an aspect of the Applicant's claimed invention includes “wherein the metering device comprises a weighing cell” (*cf.* Figure 2, Item 11, of the subject application). The Applicant respectfully notes that neither Seidl '705 nor Williams '932 includes a weighing cell as part of the rotary gas locks or star valve respectively. The Applicant also notes that the cited teachings of the Japanese patent document JP 09197028A to Koki et al is of a sensor 17 mounted on a rotated arm to detect a commentator groove 6 as a rotation sensor and is clearly not a weighing cell as claimed.

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SUMMARY

From the foregoing, the Applicant believes that the subject application as currently amended is patentable over the combined teachings of Seidl '705, Williams '932, and JP 09197028A to Koki et al taken independently or in any possible combination. The Applicant believes that the subject application is now in a condition ready for allowance and respectfully requests the prompt issuance of a Notice of Allowability. However, should there remain any impediment to the allowance of this application that may be resolved by a telephone conference, the Examiner is respectfully requested to contact the Applicant's undersigned representative at the indicated telephone number.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: 6/14/04

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